

Work Order ID 133350

Friday, June 05, 2015 7:58:40 AM

133350

to Rev P Dg. 5/16/08

Page 1

Item ID: D4857-041
Revision ID: PRELIM
Item Name: Wiper Deflector Assembly

Accept

N900040100

MINIARY ISSUE
POSITIVE RECALL
EFFECTIVE Setup Start
RELEASED AUTH
Stop DATE
NS1
NS2

Start Date: 6/05/15 Start Qty: 4.00 ***4***
Required Date: 6/05/15 Req'd Qty: 4.00 ***4***

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: 15-6-5 Date: 15-6-5 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty.	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	----------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4857	REV A

100
100
Small Fab
Small Fab

Memo
BOND AS PER DWG NOTE #8

0.00

0.00

4X

DAS
38
9-89
15/06/05

130 QC5- Inspect part completeness to step on W/O

0.00

130
QC
Quality Control

Memo
Inspect as per drawings **F4**
Rev F4

0.00

④

DAS
38
99
JUN 05 2015

160 Packaging

0.00

160
Packaging
Packaging

Memo
Identify and pack for shipping as per PPP D4857-041
Location: SHIP
PPP Rev: _____

0.00

④ 15-6-8

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

133350

Page 2

N900040100

```
Setup Start *NS1*
      Stop  *NS2*
```

Start Date: 6/05/15	Start Qty: 4.00	*4*
Required Date: 6/05/15	Req'd Qty: 4.00	*4*

Cust Item ID:
Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run	Start	*NR1*
	Stop	*NR2*

[illegible]

MCS JUN 08 2015
MCS
15-6-5

PRELIMINARY ISSUE

POSITIVE RESULTS

EFFECTIVE 12/1/64 AUTH 1564

RELEASED 5 DATE 15/06/15

to Rev F Day Atkins

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

Picklist Print

Friday, June 05, 2015 7:58:44 AM

Page 1

Work Order ID: 133350

133350

Parent Item: D4857-041

D4857-041

Parent Item Name: Wiper Deflector Assembly

Start Date: 6/05/15

Required Date: 6/05/15

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A NEW ISSUE 13-07-17 JLM VERIFIED BY:DD IPP
REV:B AS PER REV F JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4857-1 *D4857-1* WiperDeflector		Manufactured	No				Each	4.0000		4			DAS 36 9-89
										**			15/06/05

Location Loc Qty Loc Code

cck065

4

132313

4

D4944-1

Manufactured No

Each

44.0000

8

D4944-1

Gasket

**

Location Loc Qty Loc Code

GA

44

109043

44

133351 MF

15-5-5

DQA: _____ Date: _____



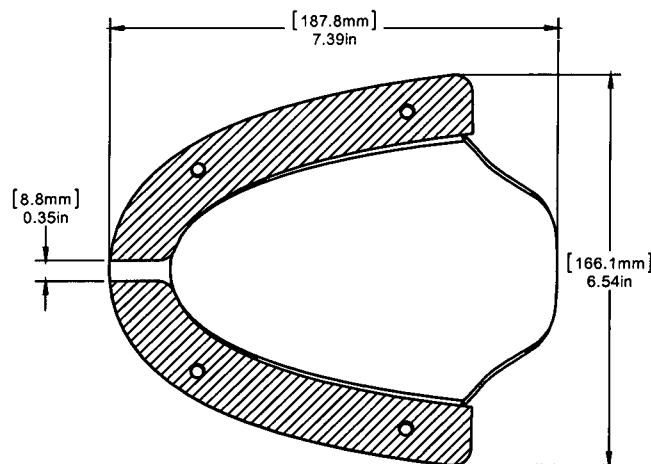
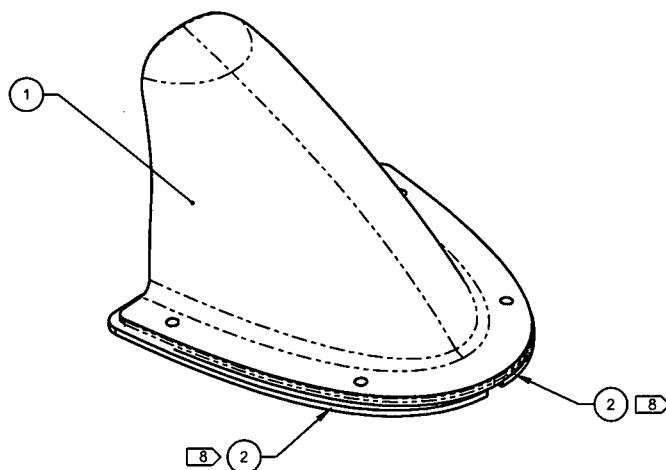
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

ITEM	QTY	P/N	DESCRIPTION
	X	D4857-041	WIPER DEFLECTOR ASSY
1	1	D4857-1	WIPER DEFLECTOR
2	2	D4944-1	GASKET



D4857-041 WIPER DEFLECTOR ASSY

NOTES:

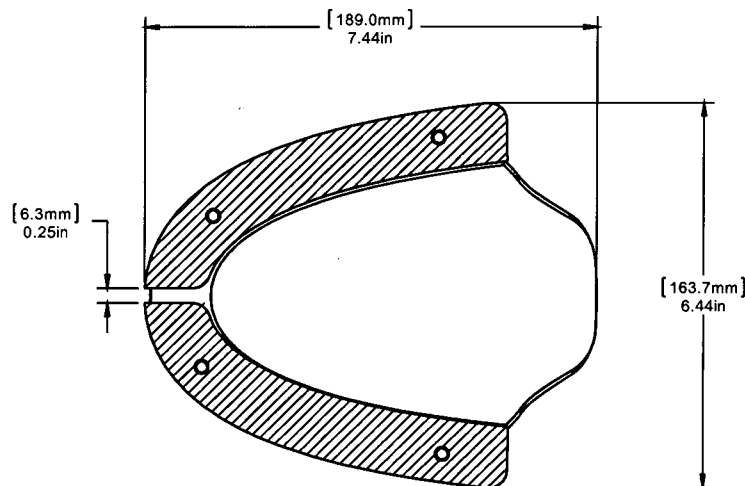
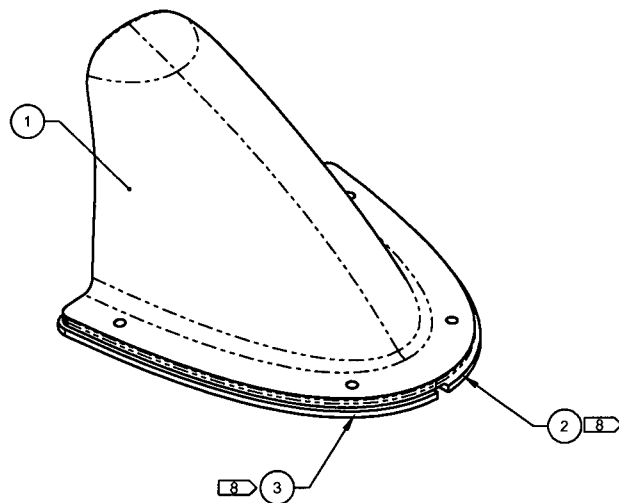
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-041, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D4944-1 GASKET TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

WORK IN PROGRESS

F	SHT 1 ADDED -041. ADDED D4857-2M (SHEET 8) AND RELABELED D4857-M TO D4857-1M (ZN B5-7). UPDATED D4857-044 (ZN B5-3). REVISED NOTES 1, 8 AND 10 (ZN A8-4, ZN A8-5, ZN A8-6, ZN A8-7, ZN A8-8). UPDATE PART WEIGHTS	AK / AJS	15.06.03
E	REVISE NOTE 6) (ZN A8-1, A8-2, A8-3); AND NOTE 8) (ZN A8-1, A8-2, A8-3)	AK	14.06.05
D	ADDED D4857-043 (ZN C7-1), D4857-044 (ZN C7-2), D4857-3 (ZN C7-4), D4857-4 (ZN C7-5) AND D4857-M (ZN C7-6)	AK	14.05.13
C	ADDED 4 MOUNTING HOLES	DW	13.12.09
B	REVISED BOM, DRAWING VIEWS, NOTES	PB	13.08.13
A	NEW RELEASE	DB	13.05.23
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 1 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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Handwritten signature/initials: DS-65

ITEM	QTY -043	P/N	DESCRIPTION
	X	D4857-043	WIPER DEFLECTOR ASSEMBLY, LH
1	1	D4857-3	WIPER DEFLECTOR LH
2	1	D5117-1	GASKET
3	1	D5117-3	GASKET



D4857-043 WIPER DEFLECTOR ASSEMBLY, LH

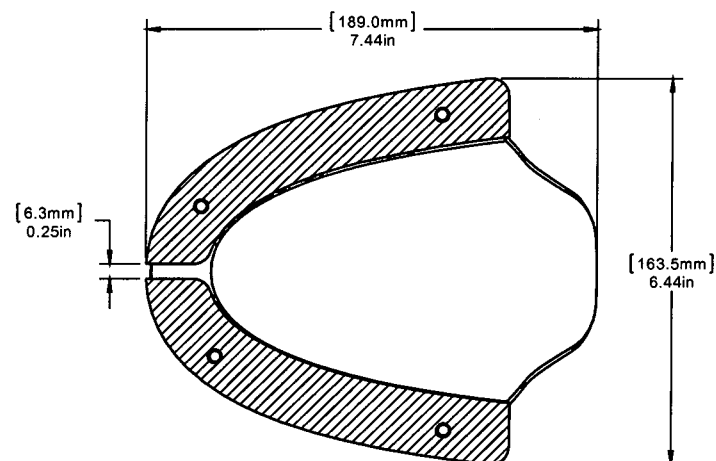
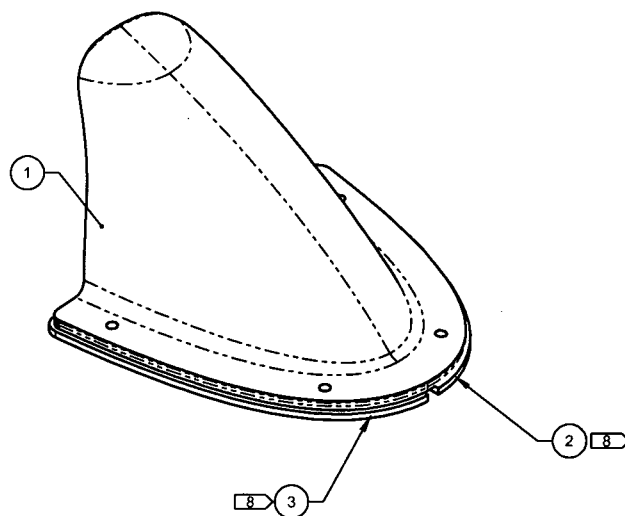
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-043, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-1/3 GASKET TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

WORK IN PROGRESS

DESIGN		DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 2 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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ITEM	QTY -044	P/N	DESCRIPTION
	X	D4857-044	WIPER DEFLECTOR ASSEMBLY, RH
1	1	D4857-4	WIPER DEFLECTOR
2	1	D5117-5	GASKET
3	1	D5117-7	GASKET



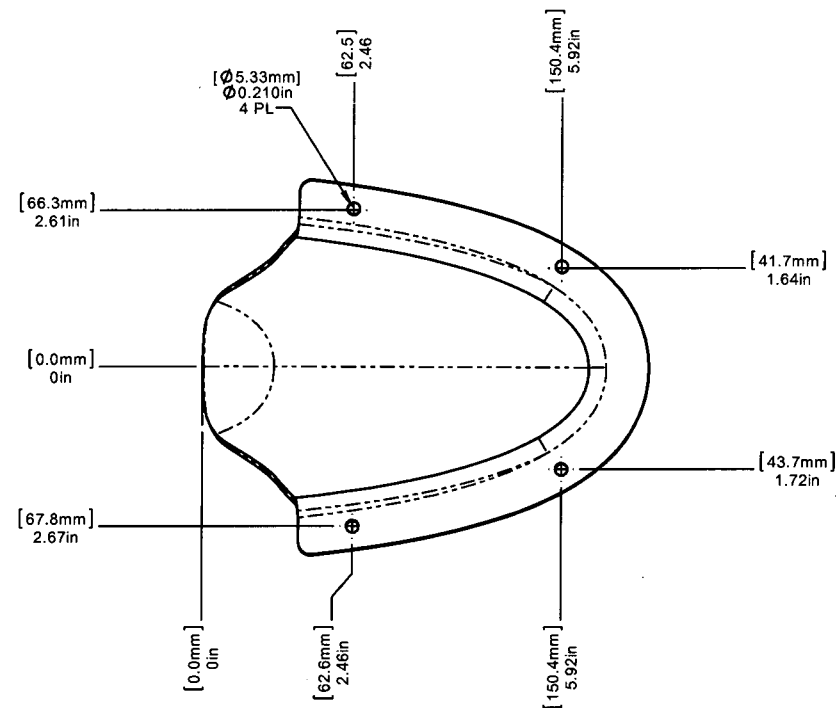
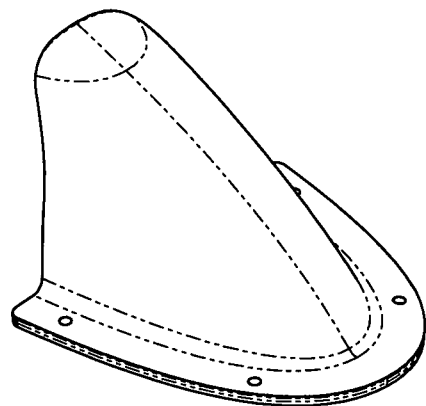
D4857-044 WIPER DEFLECTOR ASSEMBLY, RH

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-044, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-5/-7 GASKET TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

WORK IN PROGRESS

DESIGN	DW	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 3 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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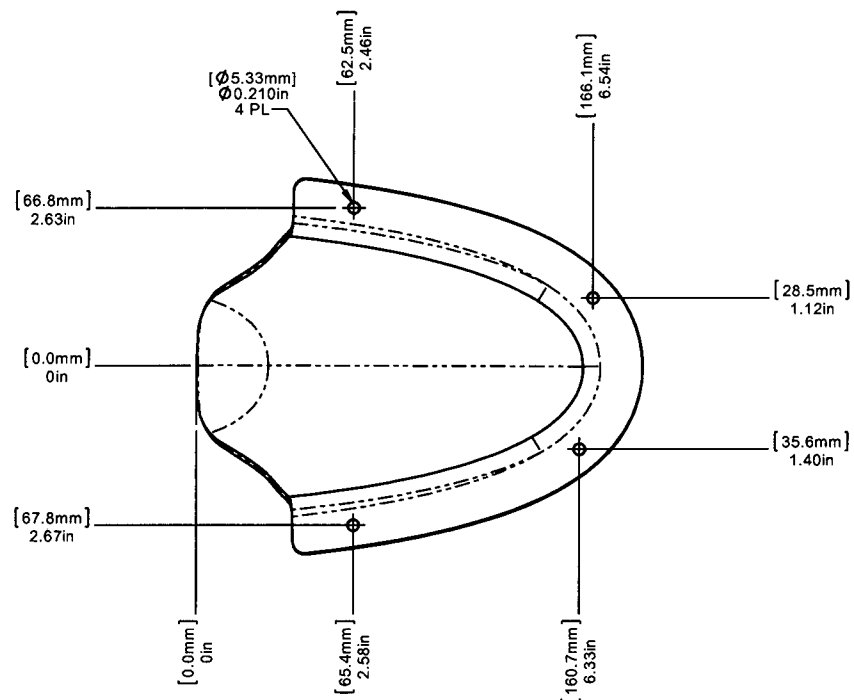
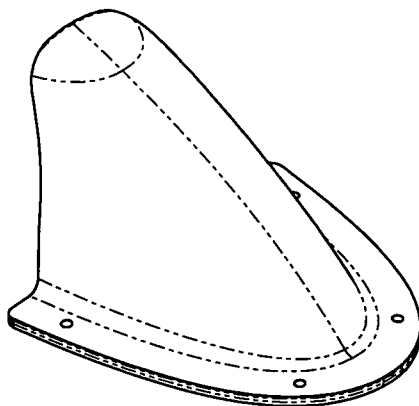
D4857-1 WIPER DEFLECTOR

NOTES:

- 1) MATERIAL: MADE FROM D4857-1M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-1-F.IGES

WORK IN PROGRESS

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 4 OF 9
APPROVED		TITLE	SCALE
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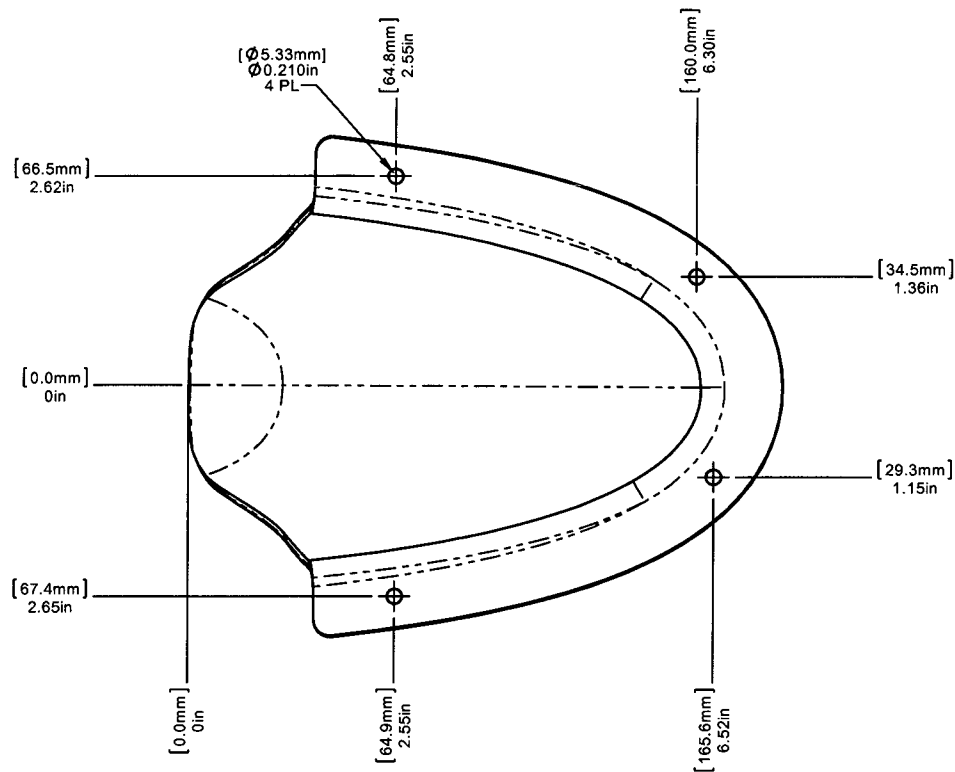
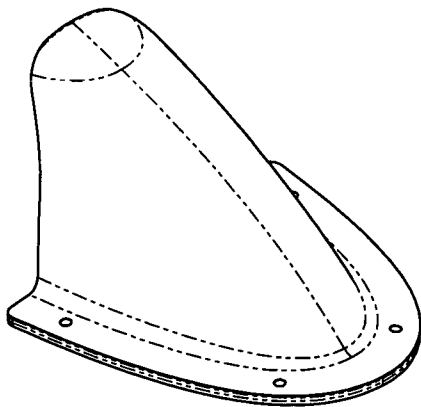
D4857-3 WIPER DEFLECTOR, LH

NOTES:

- 1) MATERIAL: MADE FROM D4857-1M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-3-F.IGES

WORK IN PROGRESS

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 5 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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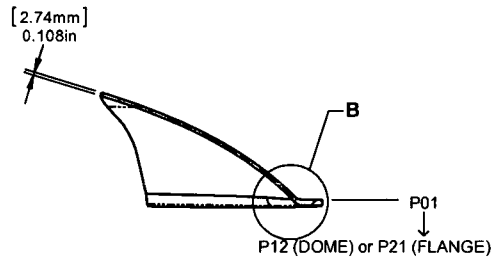
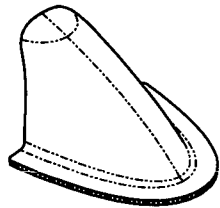
D4857-4 WIPER DEFLECTOR, RH

WORK IN PROGRESS

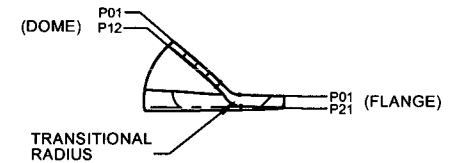
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 6 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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NOTES:

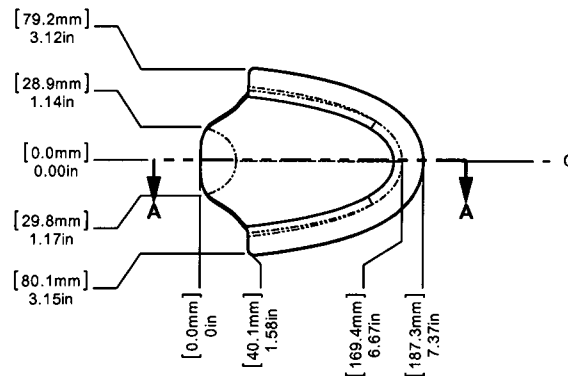
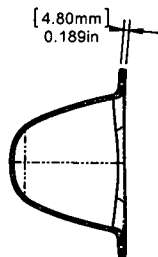
- 1) MATERIAL: MADE FROM D4857-2M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-4-F.IGES



SECTION A-A



DETAIL B



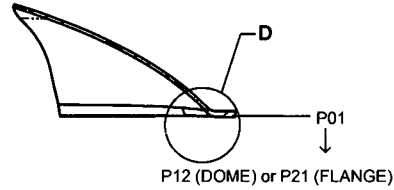
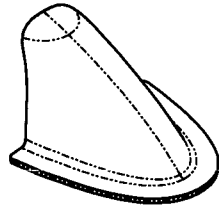
D4857-1M WIPER DEFLECTOR

NOTES:

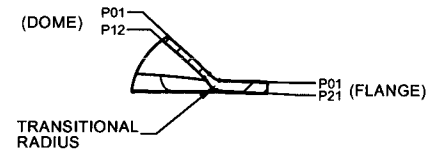
- 1 MATERIAL: KEVLAR #285/353 4H SATIN, EPOXY PREPREG, 250°F CURE, 40% R/C
- 2 MATERIAL: CARBON FIBER PREPREG, ALDILA PREPREG SYSTEM 3K2X2-FR250-204/40 T300,
- 3 MATERIAL: ALDILA #120 E-GLASS AR250 WITH 48% RC;
- 4 FINISH: PRIMER IAW MIL-P-85582, 2-7 MIL MAX,
- 5 TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6 UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 7 BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 8 IDENTIFICATION: N/A
- 9 WEIGHT: 0.35 lbs (0.16 kg)
- 10 PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-1M-F.IGES
- 11 SEE SHEET 9 FOR LAYUP SCHEDULE. MANUFACTURE IAW MPP 145. CURE 250°F FOR 4 HOURS.

WORK IN PROGRESS

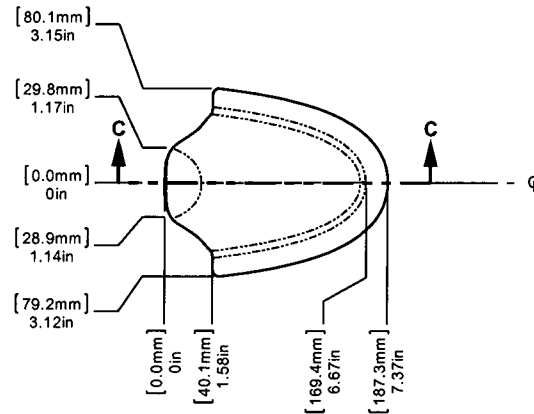
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DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 7 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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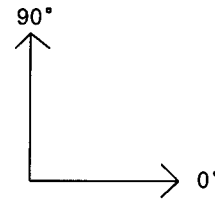
SECTION C-C



DETAIL D



D4857-2M WIPER DEFLECTOR



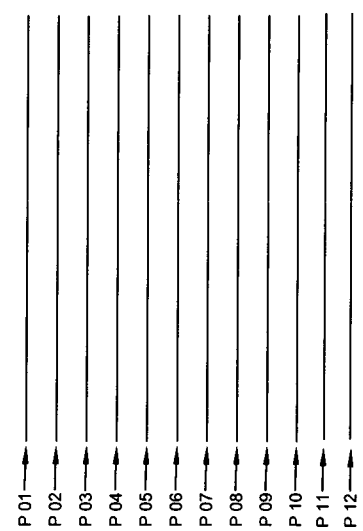
NOTES:

- 1) MATERIAL: KEVLAR #285/353 4H SATIN, EPOXY PREPREG, 250°F CURE, 40% R/C
- 2) MATERIAL: CARBON FIBER PREPREG, ALDILA PREPREG SYSTEM 3K2X2-FR250-204/40 T300,
- 3) MATERIAL: ALDILA #120 E-GLASS AR250 WITH 48% RC;
- 4) FINISH: PRIMER IAW MIL-P-85582, 2-7 MIL MAX,
- 5) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 7) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 8) IDENTIFICATION: N/A
- 9) WEIGHT: 0.35 lbs (0.16 kg)
- 10) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-2M-F.IGES
- 11) SEE SHEET 9 FOR LAYUP SCHEDULE. MANUFACTURE IAW MPP 145. CURE 250°F FOR 4 HOURS.

WORK IN PROGRESS

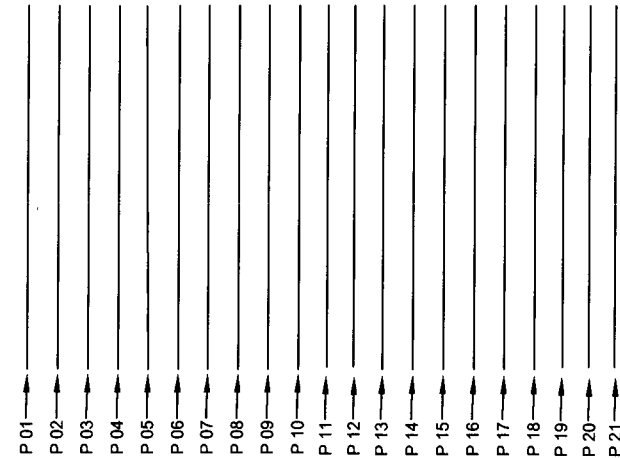
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DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 8 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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8 7 6 5 4 3 2 1



LAYUP OF LAYERS (DOME)

LAMINATE - .108in (12 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	1	.008-.010
02	0	1	.008-.010
03	90	2	.008-.010
04	0	2	.008-.010
05	90	2	.008-.010
06	0	2	.008-.010
07	90	2	.008-.010
08	0	2	.008-.010
09	90	2	.008-.010
10	0	2	.008-.010
11	90	2	.008-.010
12	0	2	.008-.010



LAYUP OF LAYERS (FLANGE)

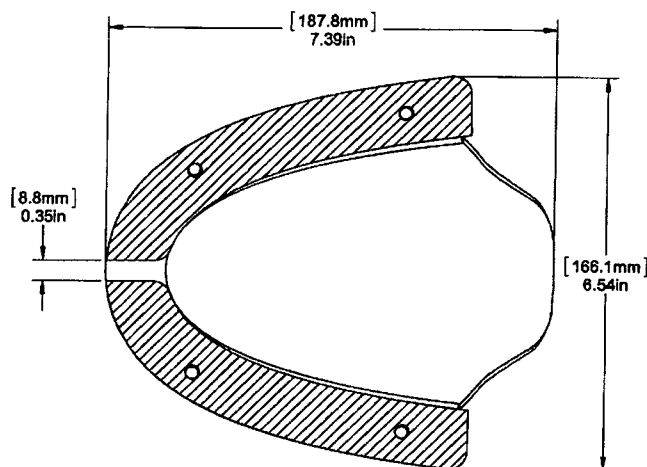
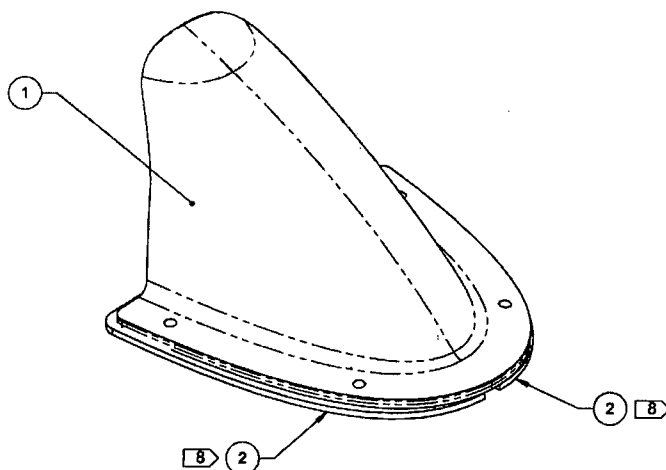
LAMINATE - .189in (21 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	1	.008-.010
02	0	1	.008-.010
03	90	2	.008-.010
04	0	2	.008-.010
05	90	2	.008-.010
06	0	2	.008-.010
07	90	2	.008-.010
08	0	2	.008-.010
09	90	2	.008-.010
10	0	2	.008-.010
11	90	2	.008-.010
12	0	2	.008-.010
13	90	2	.008-.010
14	0	2	.008-.010
15	90	2	.008-.010
16	0	2	.008-.010
17	90	2	.008-.010
18	0	2	.008-.010
19	90	2	.008-.010
20	0	2	.008-.010
21	90	3	.005

WORK IN PROGRESS

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED		DRAWING NO.	REV. F4
MFG. APPR.		D4857	SHEET 9 OF 9
APPROVED		TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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8 7 6 5 4 3 2 1

ITEM	QTY	P/N	DESCRIPTION
	X	D4857-041	WIPER DEFLECTOR ASSY
1	1	D4857-1	WIPER DEFLECTOR
2	2	D4944-1	GASKET



D4857-041 WIPER DEFLECTOR ASSY

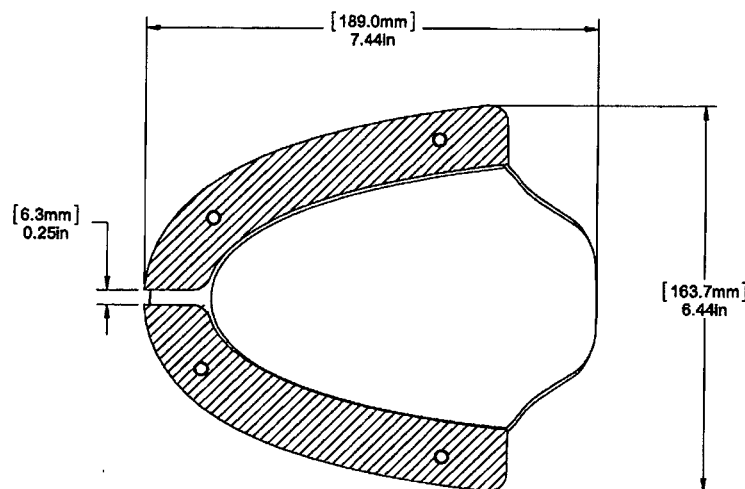
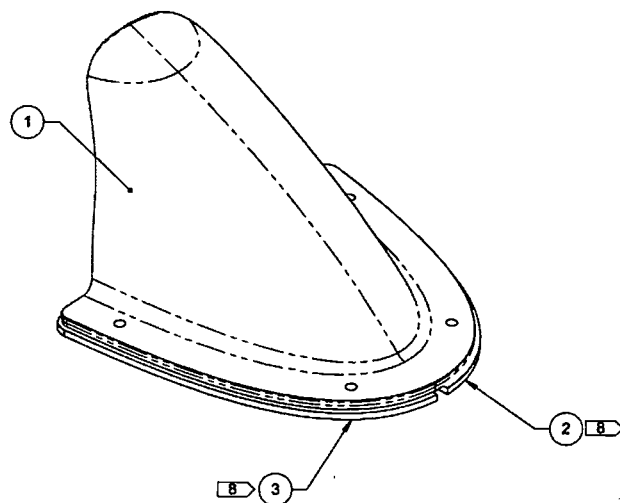
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-041, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D4944-1 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

F	SHT 1 ADDED -041, ADDED D4857-2M (SHEET 8) AND RELABELED D4857-M TO D4857-1M (ZN B5-7), UPDATED D4757-044 (ZN B5-3), REVISED NOTES 1, 8 AND 10 (ZN A8-4, ZN A8-5, ZN A8-6, ZN A8-7, ZN A8-8), UPDATE PART WEIGHTS	AK / AJS	15.06.03
E	REVISE NOTE 8) (ZN A8-1, A8-2, A8-3); AND NOTE 8) (ZN A8-1, A8-2, A8-3)	AK	14.06.05
D	ADDED D4857-043 (ZN C7-1), D4857-044 (ZN C7-2), D4857-3 (ZN C7-4), D4857-4 (ZN C7-5) AND D4857-M (ZN C7-6)	AK	14.05.13
C	ADDED 4 MOUNTING HOLES	DW	13.12.09
B	REVISED BOM, DRAWING VIEWS, NOTES	PB	13.08.13
A	NEW RELEASE	DB	13.05.23
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 1 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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APPROVED

ITEM	QTY -043	P/N	DESCRIPTION
	X	D4857-043	WIPER DEFLECTOR ASSEMBLY, LH
1	1	D4857-3	WIPER DEFLECTOR LH
2	1	D5117-1	GASKET
3	1	D5117-3	GASKET



D4857-043 WIPER DEFLECTOR ASSEMBLY, LH

NOTES:

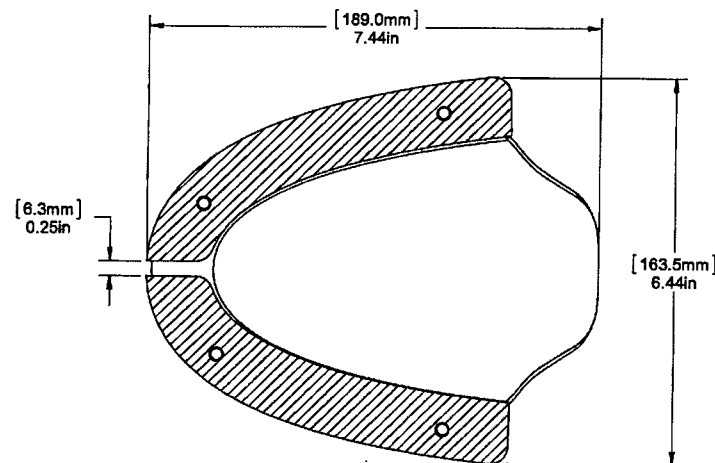
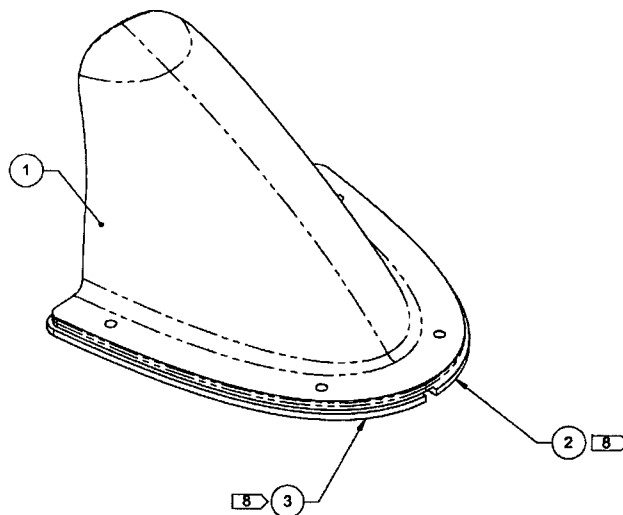
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-043, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-1/-3 GASKETS TO EDGE OF PART USING DOW CORNING 738 ADHESIVE

APPROVED

DESIGN		DART AEROSPACE LTD
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA
CHECKED	CP	DRAWING NO. D4857 REV. F
MFG. APPR.	DD	SHEET 2 OF 8
APPROVED	WM	TITLE WIPER DEFLECTOR SCALE NTS
DE APPR.	DS	
DATE	15.06.03	

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ITEM	QTY -044	P/N	DESCRIPTION
	X	D4857-044	WIPER DEFLECTOR ASSEMBLY, RH
1	1	D4857-4	WIPER DEFLECTOR
2	1	D5117-5	GASKET
3	1	D5117-7	GASKET



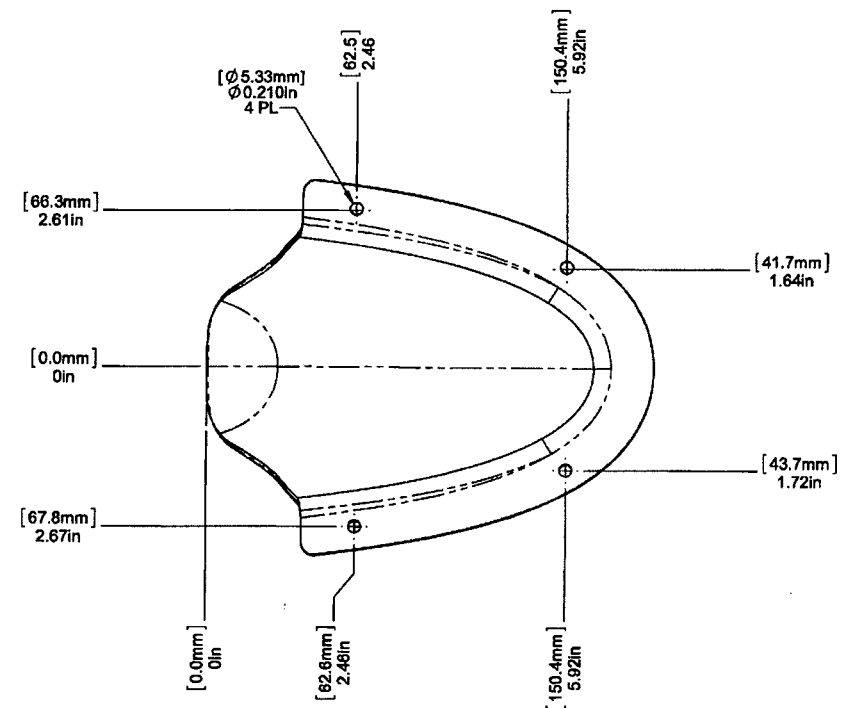
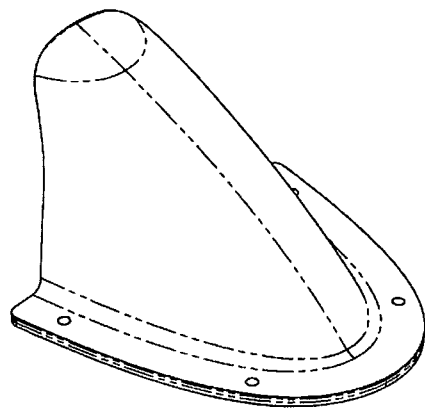
D4857-044 WIPER DEFLECTOR ASSEMBLY, RH

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-044, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-5/-7 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

APPROVED

DESIGN	DW	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 3 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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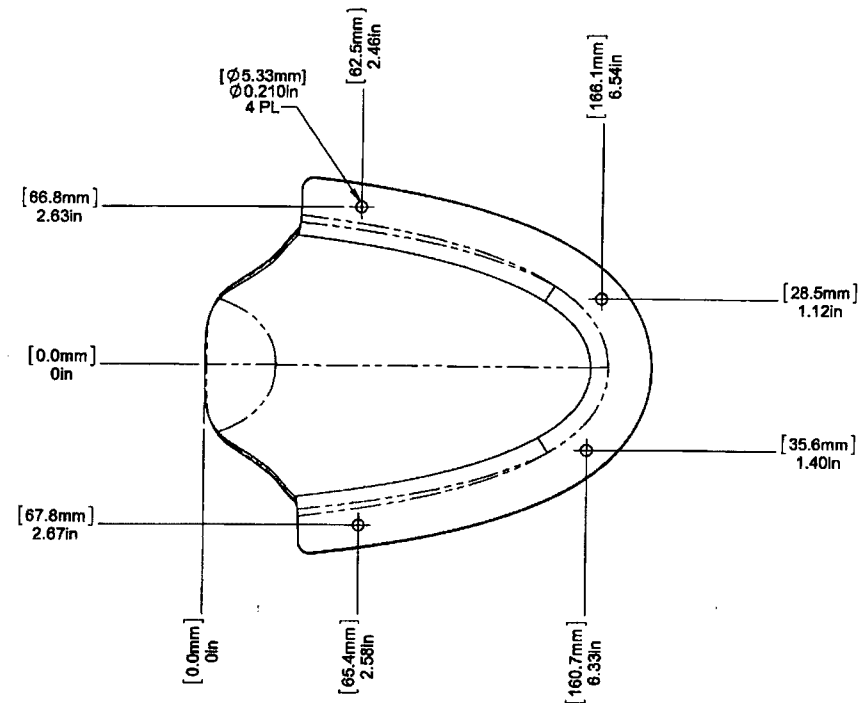
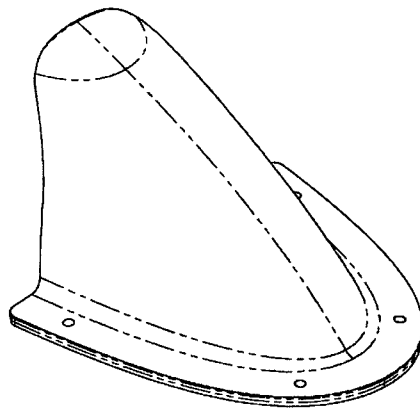
D4857-1 WIPER DEFLECTOR

NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-1-F.IGES

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 4 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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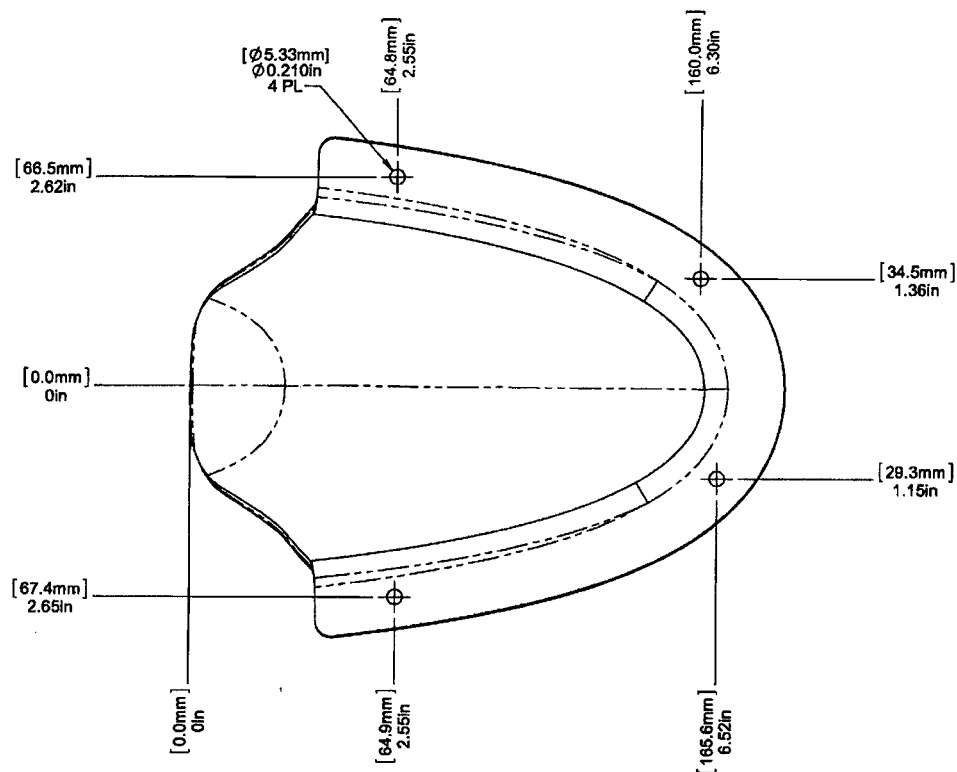
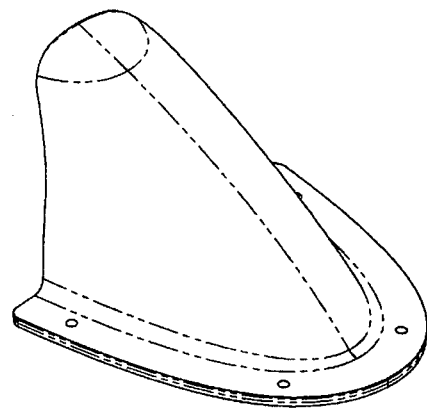
D4857-3 WIPER DEFLECTOR, LH

NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-3-F.IGES

APPROVED

DESIGN	DW	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 6 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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D4857-4 WIPER DEFLECTOR, RH

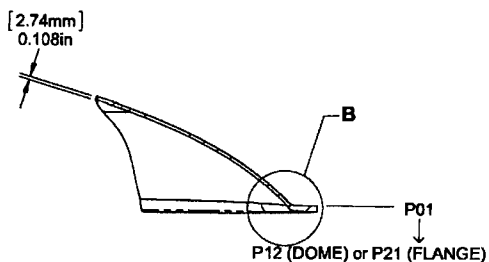
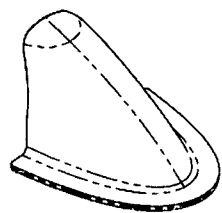
NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-4-F.IGES

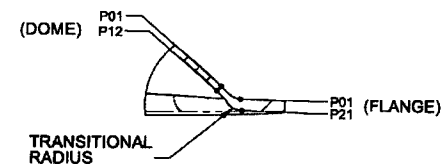


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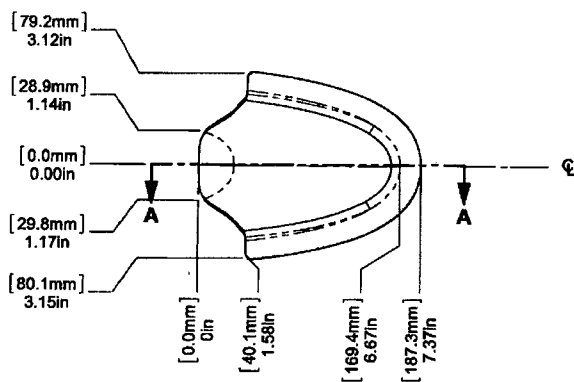
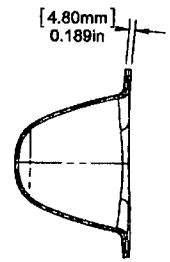
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 6 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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SECTION A-A



DETAIL B



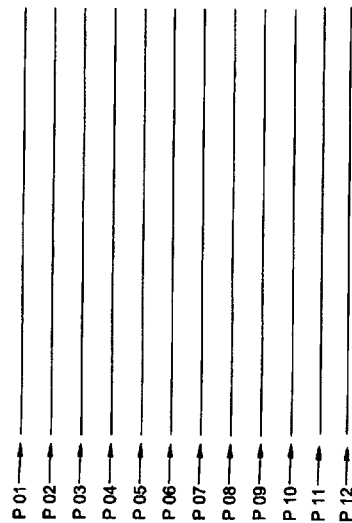
D4857-M WIPER DEFLECTOR

NOTES:

- 1) MATERIAL: KEVLAR #285/353 4H SATIN, EPOXY PREPREG, 250°F CURE, 40% R/C
- 2) MATERIAL: CARBON FIBER PREPREG, ALDILA PREPREG SYSTEM 3K2X2-FR250-204/40 T300,
- 3) MATERIAL: ALDILA #120 E-GLASS AR250 WITH 48% RC;
- 4) FINISH: PRIMER IAW MIL-P-85582, 2-7 MIL MAX.
- 5) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 7) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 8) IDENTIFICATION: N/A
- 9) WEIGHT: 0.35 lbs (0.16 kg)
- 10) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-M-F.IGES
- 11) SEE SHEET 8 FOR LAYUP SCHEDULE. MANUFACTURE IAW MPP 145. CURE 250°F FOR 4 HOURS.

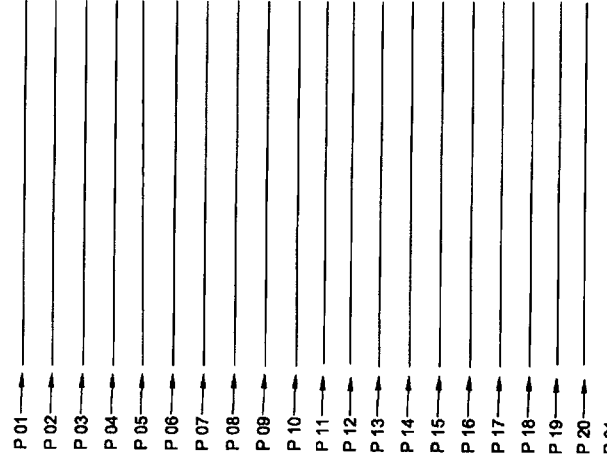
APPROVED

DESIGN	DW	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 7 OF 8
APPROVED	WM	TITLE	SCALE
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LAYUP OF LAYERS (DOME)

LAMINATE - .108in (12 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	1	.008-.010
02	0	1	.008-.010
03	90	2	.008-.010
04	0	2	.008-.010
05	90	2	.008-.010
06	0	2	.008-.010
07	90	2	.008-.010
08	0	2	.008-.010
09	90	2	.008-.010
10	0	2	.008-.010
11	90	2	.008-.010
12	0	2	.008-.010



LAYUP OF LAYERS (FLANGE)

LAMINATE - .189in (21 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	1	.008-.010
02	0	1	.008-.010
03	90	2	.008-.010
04	0	2	.008-.010
05	90	2	.008-.010
06	0	2	.008-.010
07	90	2	.008-.010
08	0	2	.008-.010
09	90	2	.008-.010
10	0	2	.008-.010
11	90	2	.008-.010
12	0	2	.008-.010
13	90	2	.008-.010
14	0	2	.008-.010
15	90	2	.008-.010
16	0	2	.008-.010
17	90	2	.008-.010
18	0	2	.008-.010
19	90	2	.008-.010
20	0	2	.008-.010
21	90	3	.005

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 8 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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